

REMARKS

Claims 1-3 and 6-16 are pending.

Claims 2-3 and 11-15 have been withdrawn from consideration by the Examiner for being directed to non-elected subject matter.

By this Preliminary Amendment, Claims 1 and 10 are amended. Support for the amendments can be found, for example, at least in paragraphs [0037] and [0047] – [0049] of the application as originally filed.

As such, Applicants respectfully submit that no new matter is presented herein.

Claim Rejection – 35 U.S.C. § 112

Claim 10 is rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicants respectfully traverse the rejection. The Office Action asserts Claim 10 requires that the oxide film is made from several oxides that will be the final films themselves. Applicants respectfully submit Claim 10, as amended herein, recites that the oxide film is constituted of an oxide of a paraelectric dielectric material that is selected from a group consisting of various materials. As such, Applicants respectfully submit that Claim 10 has been amended in a manner that is fully supported by the originally filed application and is enabled. Applicants respectfully request withdrawal of the rejection.

Claims 1 and 6-10 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The claims have been amended in a manner believed to be fully responsive to the rejection. Applicants respectfully request withdrawal of the rejection.

Claim Rejection -- 35 U.S.C. §103

Claims 1, 6-8 and 10 are rejected under 35 U.S.C. §103(a) as being unpatentable over US Patent No. 5,462,899 to Ikeda; and Claim 9 is rejected under 35 U.S.C. §103(a) as being unpatentable over Ikeda in view of United States Patent application Publication No. 2001/0012698 to Hayashi.

Applicants respectfully traverse the rejections for at least the following reason(s).

Claim 1 recites a method for preparing an oxide film on a substrate including, among other steps, of passing a gas mixture through a gas activating means arranged between a gas-mixing unit and a shower plate, and which has a pipe line with an inner wall surface area within a range of $4.8 \times 10^{-3} \text{ m}^2$ to $1.28 \times 10^{-1} \text{ m}^2$. By keeping the inner wall surface area of the pipe line within the recited range, unexpected advantages and benefits are obtained which are not possible using the methodology taught by Ikeda.

For example, activation of the raw gas and the realization of excellent epitaxial growth; and optimization of the decomposition of the raw material to be introduced into the reaction chamber to obtain the desired metal atom-containing molecules, which results in the oxide film being formed efficiently and with improved film properties. See paragraph [0037] of the originally filed patent application.

Moreover, as explained in paragraph [0047] and illustrated in Figure 3 of the application, the recited inner wall surface area beneficially affects the leak current density of the PZT thin film. See paragraph [0048] and Figure 4 for how the recited inner wall surface area beneficially affects the polarization-inversion charge density; and see paragraph [0049] and Figure 5 for how the recited inner wall surface area beneficially affects the polarization-saturation voltage.

Ikeda simply does not teach or suggest a gas activating means having a pipe line with an inner wall surface area within the claimed range of Claim 1.

Hayashi does not cure or otherwise address the above-described deficiency of Ikeda.

Applicants respectfully submit Ikeda and Hayashi, alone or in combination, do not teach or suggest the invention recited by Claim 1. Therefore, Applicants respectfully submit Claim 1 is not rendered obvious by Ikeda or the combined teachings of Ikeda and Hayashi, and should be deemed allowable.

Claims 6-10 and 16 depend from Claim 1. It is respectfully submitted that these dependent claims be deemed allowable for at least the same reasons Claim 1 is allowable, as well as for the additional subject matter recited therein.

Withdrawal of the rejections is respectfully requested.

Conclusion

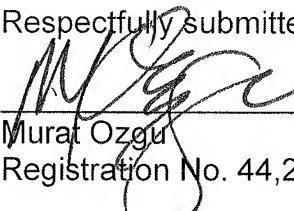
Prompt and favorable examination on the merits is respectfully requested.

In view of the foregoing, Applicants respectfully request reconsideration of the application, withdrawal of the outstanding rejections, allowance of Claims 1, 6-10 and 16, and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing attorney docket number 026390-00034.**

Respectfully submitted,


Murat Ozgu
Registration No. 44,275

Customer No. 004372

AREN'T FOX LLP

1050 Connecticut Avenue, N.W., Suite 400
Washington, D.C. 20036-5339

Tel: (202) 857-6000

Fax: (202) 638-4810

Enclosure: Request for Continued Examination